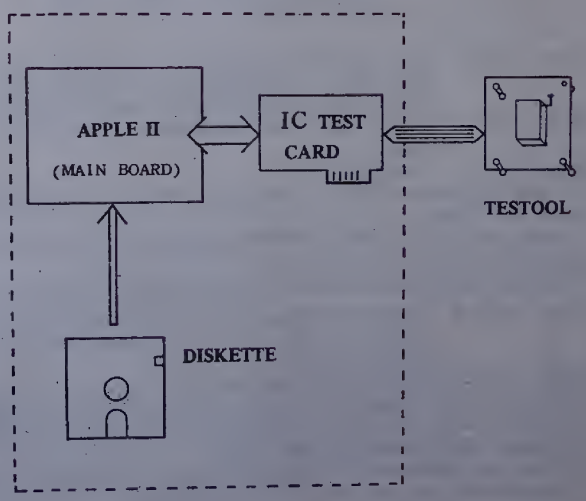
PREFACE:

Nowadays, we use IC frequently because our technology is invented and developed rapidly. Every technician has some ICs in hand. But he does not know exactly whether those ICs are good or fail. He has to take much time to inspect and verify them by IC TESTER. For IC TESTER is expensive and costs much time for testing, we have designed and developed this easy-operation and low-price equipment called IC TEST CARD.

This interface card is plugged on #1 – #7 slot of APPLE II which is served as main board, and connected with Testool which holds the IC being tested. Then just insert the Diskette (software of IC TEST CARD) to floppy disk drive . The result will be showed on display within few milliseconds.

(I). SYSTEM DIAGRAM



(Ⅱ). FUNCTIONS:

A. OPERATING DISPLAY:

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UNIVERSAL IC TESTER
BY YIH LUNG ENTERPRISE CO., LTD.

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TEST IC NO.

xxxxxxxxxxxxxxxxxxxx
x                  x
x    74-LS – 138   x
x                  x
xxxxxxxxxxxxxxxxxxxx

CTRL-S  : SEARCH IC NO.
CTRL-C  : CHANGE IC NO.
CTRL-L  : LOOP TEST
SPACE   : START TESTING
CTRL-S, CTRL-C, CTRL-L OR SPACE ?
RESULT : TEST OK
```

* Press CTRL S : Searching number of IC being tested on Testool, and showing "138 OVER", "241 OVER", ... If IC being tested is fail or not in catagory of IC tested, then it shows "OVER".
* Press CTRL C : KEY IN number of IC being tested: 74SO4, 74H123, 74LS74 7486 .....
* Press SPACE : Start testing
* If testing OK, it shows "TEST OK" and generate "BI———" a long sound which means this IC good.
* If testing error, it shows "TEST ERROR" and generate "BI, BI, BI, BI, BI" 5 short sounds which means this IC fail.
* If IC number input is wrong, it shows "THIS NUMBER IS NOT AVAILABLE".
* Press CTRL L : Testing the IC being tested on Testool continuously. If this IC is aged or unstable, it shows "LEVEL ERROR", otherwise it shows "TEST OK".

B. Being able to test OPEN–COLLECTOR, TRI–STATE ..... etc. TTL.

C. Containing protection design of IC's short circuit. If putting IC being tested on Testool inversely or short circuit of IC itself, it does not damage the TEST CARD and shows "LEVEL ERROR, POWER LOW".

D. All input and output level of IC being tested can be tested completely. The High-Low Level of IC being tested can be set up or adjusted.

It's range is: { High : 2.4V – 4.5V
Low : 0.4V – 1.0V

(Ⅲ). OPERATION

1. This IC TEST CARD can be plugged on any slot optionally. Please be noted which slot the card plugged. When display shows

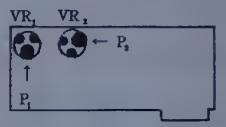
   CARD IN WHICH SLOT?

   (1, 2, 3, 4, 5, 6, 7)?

   Just press the number of slot which IC TEST CARD is on on keyboard.

2. The software of this IC TEST CARD is based on ASCII code of APPLESOFT. If printer is on, the IC TEST CARD is off.

3. The level tested can be adjusted. If the ICs being tested are various brands and can not be tested by the level defaulted, the level can be adjusted by user as follows:



   VR1 for HIGH LEVEL, range: 2.4V ~ 4.5V default: 2.6V

   VR2 for LOW LEVEL, range: 0.3V ~ 1.2V default: 0.8V

   It can be checked by MULTI-FUNCTION METER, OCILOSCOPE METER .... etc. The right way is to check the voltage of P1 or P2 to ground.

4. All right of this manual and software are reserved by YIH LUNG ENTERPRISE CO., LTD.. If the damage of software diskette was casued by user's modification, we do not offer the new diskette or any service. Please keep the diskette with the serial number on it in order to ask to change the diskette of new software and more service the day after.

(IV). LIST OF IC TESTED:

FLOPPY DISK I (TTL)

A. STANDARD TTL (54/7400 SERIES)

7400	7401	7402	7403	7404	7405	7406
7407	7408	7409	7410	7411	7412	7413
7414	7415	7416(7406)	7417(7407)	7420	7421	7425
7427	7428	7430	7432	7437	7438	7442
7445	7447	7448	7449	7473	7474	7475
7476	7483	7485	7486	7490	7492	7493
7495	7496	74107	74109	74125	74126	74132
74136	74139	74145	74147	74148	74151	74153
74155	74156	74157	74158	74160	74161	74162
74163	74164	74165	74166	74170	74173	74174
74175	74190	74191	74193	74194	74195	74197
74247	74248	74251	74257	74259	74266	74276
74279	74283	74365	74366	74367	74368	74393
74490						

B. LOW POWER SCHOTTKY TTL (54/74LS SERIES)

74LS00	74LS01	74LS02	74LS03	74LS04	74LS05	74LS08
74LS09	74LS10	74LS11	74LS12	74LS13	74LS14	74LS15
74LS20	74LS21	74LS27	74LS28	74LS30	74LS32	74LS37
74LS38	74LS42	74LS47	74LS51	74LS55	74LS73	74LS74
74LS75	74LS76	74LS83	74LS85	74LS86	74LS90	74LS92
74LS93	74LS95	74LS96	74LS107	74LS109	74LS112	74LS113
74LS125	74LS126	74LS132	74LS133	74LS136	74LS138	74LS139
74LS145	74LS147	74LS148	74LS151	74LS153	74LS155	74LS156
74LS157	74LS158	74LS160	74LS161	74LS162	74LS163	74LS164
74LS165	74LS166	74LS170	74LS173	74LS174	74LS175	74LS183
74LS189	74LS190	74LS191	74LS192	74LS193	74LS194	74LS195
74LS197	74LS240	74LS241	74LS242	74LS243	74LS244	74LS245
74LS247	74LS248	74LS251	74LS253	74LS257	74LS258	74LS259
74LS261	74LS266	74LS273	74LS279	74LS280	74LS283	74LS295
74LS298	74LS323	74LS324	74LS348	74LS352	74LS365	74LS366
74LS367	74LS368	74LS373	74LS374	74LS375	74LS377	74LS378
74LS380	74LS390	74LS393	74LS399	74LS490	74LS642	74LS643
74LS669	74LS670					

C. SCHOTTKY-CLAMPED TTL (54/74S SERIES)

74S00	74S03	74S04	74S05	74S08	74S09	74S10
74S11	74S15	74S20	74S30	74S32	74S37	74S38
74S51	74S55	74S74	74S85	74S86	74S107	74S112
74S113	74S132	74S133	74S135	74S138	74S139	74S151
74S153	74S157	74S158	74S160	74S161	74S162	74S163
74S174	74S175	74S194	74S195	74S197	74S240	74S241
74S251	74S257	74S258	74S260	74S280	74S283	74S299
74S373	74S374					

D. LOW POWER TTL (54/74L SERIES)

74L00	74L02	74L03	74L04	74L05	74L08	74L10
74L20	74L30	74L32	74L42	74L47	74L51	74L55
74L73	74L74	74L75	74L85	74L86	74L90	74L93
74L95	74L96	74L151	74L153	74L157	74L164	74L165
74L192	74L193					

E. HIGH-SPEED TTL (54/74H SERIES)

74H00	74H01	74H04	74H05	74H10	74H11	74H15
74H20	74H30	74H51	74H55	74H73	74H74	74H76
74H183						

F. RANDOM-ACCESS MEMORY (54/74 SERIES)

7489	74S89	74S189	74S201	74S287	74S288	74S289
74S471	74S472					

FLOPPY DISKS II (CMOS)

A. TTL EQUIVALENT CMOS DEVICE (54/74HC SERIES)

74HC00	74HC02	74HC04	74HC08	74HC10	74HC14	74HC20
74HC30	74HC32	74HC42	74HC40	74HC73	74HC74	74HC76
74HC83	74HC85	74HC86	74HC89	74HC90	74HC91	74HC93
74HC95	74HC107	74HC138	74HC139	74HC150	74HC151	74HC154
74HC157	74HC158	74HC160	74HC161	74HC162	74HC163	74HC164
74HC165	74HC173	74HC174	74HC175	74HC192	74HC193	74HC194
74HC195	74HC200	74HC221	74HC240	74HC241	74HC244	74HC257
74HC373	74HC374	74HC533	74HC534			

B. CD 45/4000 SERIES (OR MC 145/140 SERIES) CMOS DEVICES

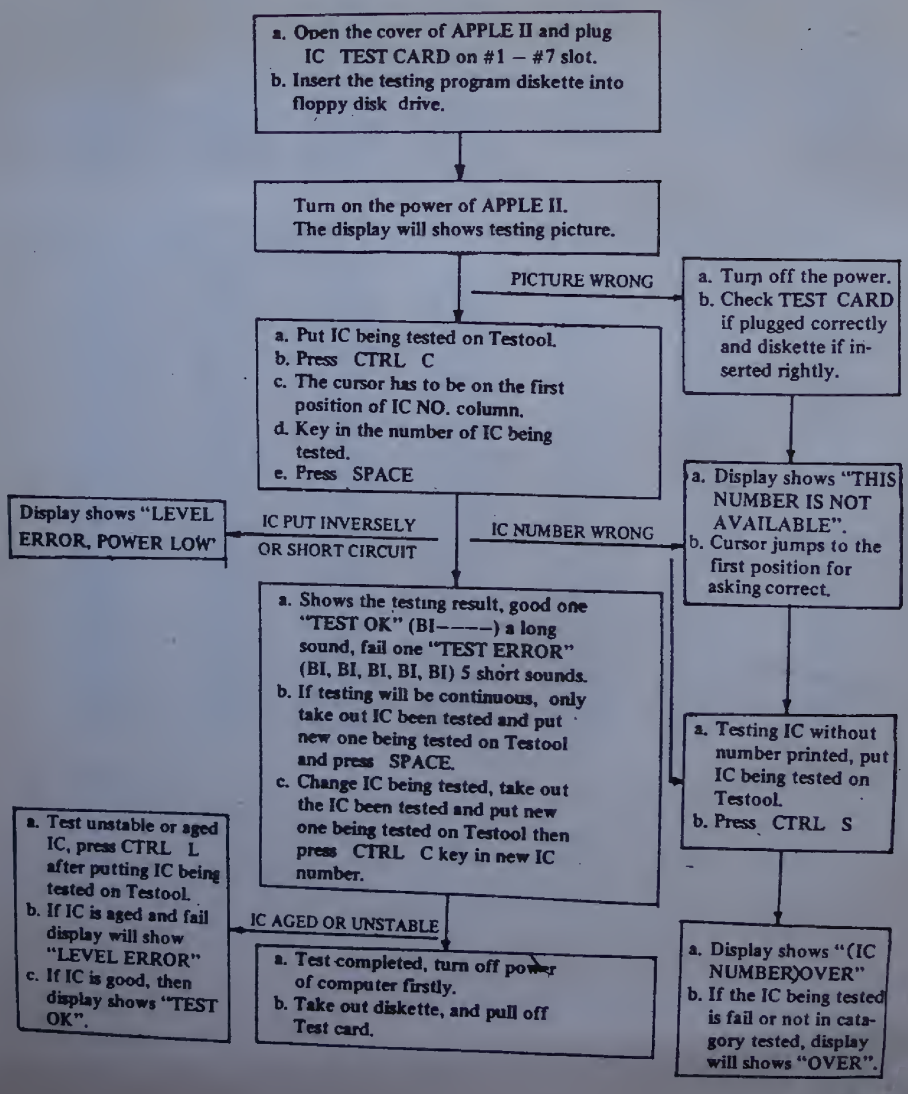
CD4000	CD4001	CD4002	CD4006	CD4007	CD4008	CD4009
CD4010	CD4011	CD4012	CD4013	CD4014	CD4015	CD4016
CD4017	CD4018	CD4019	CD4020	CD4021	CD4022	CD4023
CD4024	CD4025	CD4027	CD4028	CD4029	CD4030	CD4032
CD4035	CD4036	CD4038	CD4039	CD4040	CD4041	CD4042
CD4043	CD4044	CD4047	CD4049	CD4050	CD4051	CD4052
CD4053	CD4054	CD4055	CD4056	CD4060	CD4063	CD4066
CD4068	CD4069	CD4070	CD4071	CD4072	CD4073	CD4075
CD4076	CD4077	CD4078	CD4081	CD4082	CD4085	CD4086
CD4093	CD4094	CD4098	CD4099	CD40102	CD40103	CD40104
CD40106	CD40107	CD40160	CD40161	CD40162	CD40163	CD40174
CD40175	CD40182	CD40192	CD40193	CD40194	CD40195	CD40257
CD4501	CD4502	CD4503	CD4506	CD4508	CD4510	CD4511
CD4512	CD4514	CD4515	CD4516	CD4518	CD4519	CD4520
CD4521	CD4522	CD4526	CD4527	CD4528	CD4530	CD4531
CD4532	CD4538	CD4539	CD4543	CD4544	CD4547	CD4549
CD4551	CD4553	CD4554	CD4555	CD4556	CD4557	CD4558
CD4559	CD4560	CD4561	CD4562	CD4566	CD4569	CD4572
CD4582	CD4583	CD4585	CD4702	CD4732		

C. MEMORY

4164	2114	2125	2511	82S16	8216	8T26
8T28						

- We will add TTL IC category to be tested profoundly and will include ICs of CMOS, MEMORY, ... etc. to be tested by this INTERFACE CARD in order to enlarge it's function.

(VI). FLOW DIAGRAM OF TESTING OPERATION:



ATTENTION:

We have added CMOS IC to the diskette as follows:

CD 4000	CD 4053	CD 4501	74HC 00	74HC 164
4001	4066	4502	02	165
4002	4068	4503	04	173
4006	4069	4510	08	174
4008	4071	4511	10	175
4009	4072	4512	14	192
4010	4073	4516	20	193
4011	4075	4518	30	194
4012	4076	4519	32	195
4013	4077	4520	42	240
4014	4078	4532	48	241
4015	4081	4555	73	244
4016	4082	4556	74	373
4017	4093	4572	76	374
4020	4099		83	257
4022	40106		85	533
4023	40107		86	534
4025	40160		90	
4027	40161		91	
4028	40162		93	
4030	40163		95	
4035	40174		107	
4040	40175		138	
4041	40192		139	
4042	40193		151	
4043	40194		157	
4044	40195		158	
4049	40257		160	
4051			162	
4052			163	

Due to adding new items. we have our program in the diskette changed as follows:

When you run the program, it will show:

PICTURE 1 : OUR MARKS.

PICTURE 2 : RIGHT LOCATION OF IC PINS.

PICTURE 3 : A. TTL 54/74 SERIES
B. CMOS 40/45 SERIES
C. HCMOS 74HC SERIES
WHICH ONE? A, B OR C?

※ Afterselecting, press "RETURN", then it will show:

PICTURE 4 : OUR MARK & WAITING,

PICTURE 5 : CARD IN WHICH SLOT?
(1, 2, 3, 4, 5, 6or7)?

※ After selecting, it will show "OPERATING DISPLAY PICTURE" as in the manual.

Press "CTRL" "C"

If you select A, then Press: 74-
or 74-S-
or 74-LS-

If you select B, then press: CD-40-
or CD-45-

If you select C, then press: 74-HC-

Other operation is the same as the manual.

IC TEST CARD

MANUAL

(part Ⅱ)